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MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			EXAMINER CHEN, WEN YING PATTY	
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Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Response to Arguments

Applicant's arguments, filed 7/20/05, with respect to the rejections of all pending claims have been fully considered and are persuasive due to the submission of certified English translation of the claimed Foreign Priority document. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the prior arts as listed in the Office Action set forth below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Furuwari et al. (JP 11-142841).

With respect to claim 1: Furuwari et al. disclose in Figure 1 a liquid crystal display device comprising: a liquid crystal display panel (element 9); a backlight unit having a fluorescent lamp (element 4), a reflection sheet (element 2) reflecting light emitted from the fluorescent lamp, and a bottom cover (element 6) supporting the reflection sheet; and a metal chassis (element 10) supporting and affixing the liquid crystal display panel and the backlight unit.

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As to claim 2: Furuwari et al. further disclose in Figure 1 that the backlight unit comprises: a panel-type light guide plate (element 5) having a light projection plane and a light incident plane; a reflection plate (element 3) along a rear side of the light guide plate; a lamp assembly (element 4) at the light incident plane of the light guide plate, the lamp assembly including the fluorescent lamp and the reflection sheet (element 2) at an outer side of fluorescent lamp; a plurality of optical sheets (element 8) over the light projection plane of the light guide plate; a rectangular mold frame (element 7) receiving the reflection plate, the light guide plate, the plurality of optical sheets, and the lamp assembly therein; and a bottom cover (element 6) extending from a bottom of the mold frame to an outer side of the reflection sheet.

As to claim 3: Furuwari et al. further disclose in Figure 1 that the reflection sheet (element 2) encloses an outer side of the fluorescent lamp except for a light exit portion of the fluorescent lamp and overlaps a portion of the light guide plate.

As to claim 4: Furuwari et al. further disclose in Figure 1 that the reflection sheet (element 2) has a round shape and end portions of the reflection sheet overlaps a portion of the light guide plate by a first overlap amount.

As to claim 6: Furuwari et al. further disclose in Paragraph 0005 that the reflection sheet is formed of polyethylene terephthalate (PET).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 5, 10-12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuwari et al. (JP 11-142841) in view of Shiotani et al (JP 2001/338512A).

With respect to claim 5: Furuwari et al. disclose all of the limitations of the liquid crystal display device set forth in the previous claims, but fail to specifically disclose that the first overlap amount is within a range of about 0.2mm to about 30mm.

However, Shiotani et al. in Figure 5 disclose a reflection sheet (element 8) overlapping the light guide plate (element 5) with an overlapping portion (element 21a) by an amount of 0.5mm (element w; column 11, line 4), which is in the specified range of between 0.2mm and 30mm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to construct a liquid crystal display device as taught by Furuwari et al. wherein the first overlapping amount is as taught by Shiotani et al., since Shiotani et al. teach that the overlapping amount determines the effective light-emitting dimension and the unused section of the light-emitting surface of the light guide plate (Column 2, lines 43-50).

As to claim 10: Furuwari et al. disclose all of the limitations of the liquid crystal display device set forth in the previous claims, but fail to specifically disclose that the space between an end portion of the bottom cover and the light guide plate is within a range of about 0.1mm to about 50mm.

However, Shiotani et al. in Figure 5 disclose a bottom cover (element 3) with a space (element C) between the light guide plate (element 5) of an amount of 0.1mm (Column 11, line 3), which is in the specified range of between 0.1mm and 50mm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to produce a liquid crystal display device according to Furuwari et al. with the specified spacing dimension taught by Shiotani et al. so that the light leakage amount can be controlled with the gap dimensions.

As to claims 11: Furuwari et al. disclose in Figure 1 that the backlight unit comprises: a panel-type light guide plate (element 5) having a light projection plane and a light incident plane; a reflection plate (element 3) along a rear side of the light guide plate; a lamp assembly (element 4) at the light incident plane of the light guide plate, the lamp assembly including the fluorescent lamp and the reflection sheet (element 2) at an outer side of fluorescent lamp; a plurality of optical sheets (element 8) over the light projection plane of the light guide plate; a rectangular mold frame (element 7) receiving the reflection plate, the light guide plate, the plurality of optical sheets, and the lamp assembly therein; and a bottom cover (element 6) extending from a bottom of the mold frame to an outer side of the reflection sheet.

Furuwari et al. further disclose in Figure 1 that the reflection sheet (element 2) has a round shape and end portions of the reflection sheet overlaps a portion of the light guide plate by

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a first overlap amount, but fail to specifically disclose that the first overlap amount is within a range of about 0.2mm to about 30mm and that the space between an end portion of the bottom cover and the light guide plate is within a range of about 0.1mm to about 50mm.

However, Shiotani et al. in Figure 5 disclose a reflection sheet (element 8) overlapping the light guide plate (element 5) with an overlapping portion (element 21a) by an amount of 0.5mm (element w; column 11, line 4), which is in the specified range of between 0.2mm and 30mm and a bottom cover (element 3) with a space (element C) between the light guide plate (element 5) of an amount of 0.1mm (Column 11, line 3), which is in the specified range of between 0.1mm and 50mm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to construct a liquid crystal display device as taught by Furuwari et al. wherein the first overlapping amount and the specified spacing are as taught by Shiotani et al., since Shiotani et al. teach that the overlapping amount determines the effective light-emitting dimension and the unused section of the light-emitting surface of the light guide plate (Column 2, lines 43-50) and that the light leakage amount can be controlled with the gap dimensions of the spacing of the bottom cover.

As to claim 12: Furuwari et al. further disclose in Paragraph 0005 that the reflection sheet is formed of polyethylene terephthalate (PET).

As to claim 16: Furuwari et al. further disclose in Figure 1 that the reflection sheet (element 2) encloses an outer side of the fluorescent lamp except for a light exit portion of the fluorescent lamp.

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Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Furuwari et al. (JP 11-142841) in view of Nakano (US 2003/0053008A1).

Furuwari et al. disclose all of the limitations of the liquid crystal display device set forth in claim 1, but fail to disclose that the reflection sheet is formed of one of a synthetic resin including one of a polymer having a high reflexivity and Ti.

However, Nakano discloses in Paragraph 0036 and Figure 1 a reflection sheet (element 2) formed of one of a synthetic resin, which includes one of a polymer having a high reflexivity and Ti.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to make the reflection sheet for the liquid crystal display device disclosed by Furuwari et al. with the reflection sheet composition disclosed by Nakano, since the use of a polymer having a high reflexivity and Ti, especially the white titanium, exhibits a strong effect to improve the concealing property (Page 3, paragraph 0036).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Furuwari et al. (JP 11-142841) in view of Matsuda et al. (US 2002/0167626A1).

Furuwari et al. disclose all of the limitations of the liquid crystal display device set forth in claim 2, but fail to disclose that the reflection sheet being formed by an extension of the reflection plate.

However, Matsuda et al. disclose in Figure 9 a reflection sheet (element 10) formed from the extension of the reflection plate (element 10).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the single element structure of the reflection sheet/plate disclose by Matsuda et al. in the display device disclosed by Furuwari et al. so that the thickness of the LCD device would be thinner by reducing two reflection layers to one single reflection layer, as taught by Matsuda et al. (Paragraph 0112).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Furuwari et al. (JP 11-142841) in view of Lee et al. (US 2001/0003471).

Furuwari et al. disclose all of the limitations set forth in claim 1, but fail to disclose that the bottom cover has an end portion having a round shape.

However, Lee et al. disclose in Figure 18 a backlight module comprising of a bottom cover (element 1650) having an end portion of a round shape.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Furuwari et al. wherein the bottom cover of the backlight module has an end portion having a round shape as taught by Lee et al., since Lee et al. teach that the shape of the bottom cover better couples the light source thus helps to prevent distortion due to external impact and vibration (Paragraph 0119).

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Furuwari et al. (JP 11-142841) and Shiotani et al. (JP 2001/338512A) in view of Nakano (US 2003/0053008A1).

Furuwari et al. and Shiotani et al. disclose all of the limitations set forth in claim 12, but they did fail to disclose that the reflection sheet is formed of one of a synthetic resin including one of a polymer having a high reflexivity and Ti.

However, Nakano discloses in Paragraph 0036 and Figure 1 a reflection sheet (element 2) formed of one of a synthetic resin, which includes one of a polymer having a high reflexivity and Ti.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to make the reflection sheet for the liquid crystal display device disclosed by Furuwari et al. and Shiotani et al with the reflection sheet composition disclosed by Nakano, since the use of a polymer having a high reflexivity and Ti, especially the white titanium, exhibits a strong effect to improve the concealing property (Page 3, paragraph 0036).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Furuwari et al. (JP 11-142841) and Shiotani et al. (JP 2001/338512A) in view of Matsuda et al (US 2002/0167626A1).

Furuwari et al. and Shiotani et al. disclose all of the limitations of the liquid crystal display device set forth in claim 11, but fail to disclose that the reflection sheet being formed by an extension of the reflection plate.

However, Matsuda et al. disclose in Figure 9 a reflection sheet (element 10) formed from the extension of the reflection plate (element 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the single element structure of the reflection sheet/plate disclose by

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Matsuda et al. in the display device disclosed by Furuwari et al. and Shiotani et al. so that the thickness of the LCD device would be thinner by reducing two reflection layers to one single reflection layer, as taught by Matsuda et al. (Paragraph 0112).

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Furuwari et al. (JP 11-142841) and Shiotani et al (JP 2001/338512A) in view of Lee et al. (US 2001/0003471).

Furuwari et al. and Shiotani et al. disclose all of the limitations set forth in claim 11, but fail to disclose that the bottom cover has an end portion having a round shape.

However, Lee et al. disclose in Figure 18 a backlight module comprising of a bottom cover (element 1650) having an end portion of a round shape.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Furuwari et al. wherein the bottom cover of the backlight module has an end portion having a round shape as taught by Lee et al., since Lee et al. teach that the shape of the bottom cover better couples the light source thus helps to prevent distortion due to external impact and vibration (Paragraph 0119).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wen-Ying P. Chen whose telephone number is (571)272-8444. The examiner can normally be reached on 8:00-5:00 M-F.

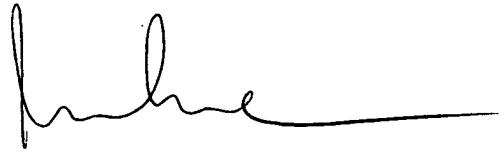
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WPC
9/01/05

Wen-Ying P Chen
Examiner
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A handwritten signature in black ink, appearing to read 'DUNG T. NGUYEN', with a long horizontal flourish extending to the right.

DUNG T. NGUYEN
PRIMARY EXAMINER